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The Microscopic Examination of Timber with regard to its Strength.

By F. M. Day.

(From the *Proceedings* of the Amer. Philosoph. Society.)*On the Comparative Morphology of Sciadopitys.* By M. T. Masters, M.D.(Reprint from the *Journal of Botany*).

Proceedings of the Torrey Club.—At the regular meeting of the Club held Tuesday evening, April 8th, the President occupied the chair and eighteen persons were present.

After some remarks by the President on the efforts that are being made to save the Adirondack forest, a committee, consisting of the President, Vice-President and Secretary, was appointed to draft resolutions to be presented at the public meeting to be held at Chickering Hall.

Mr. Hollick read a paper entitled "Notes on the Genus *Viola*," of which the following is an abstract:

The Genus Viola.:—The changes which most species of the genus *Viola* undergo in the late summer and autumn months do not seem to have had the attention bestowed upon them that their importance deserves. The changes are in leaf, stem and flower, and are apparently invariable and constant, hence of considerable value in determining specific differences.

The following species were collected and studied during the past year: *V. cucullata*, Ait.; *V. sagittata*, Ait.; *V. palmata*, L.; *V. blanda*, Willd.; *V. primulæfolia*, L.; *V. lanceolata*, L.; *V. odorata*, L.; *V. pedata*, L. and *V. canina*, L., var. *sylvestris*, Regel.—*V. cucullata* and *V. sagittata* are connected by every conceivable intermediate form, and *V. palmata* also connects with the former by insensible gradations. There is one characteristic, however, which can always be depended upon to distinguish *V. cucullata* and its varieties from the other species, and that is the decumbent habit of the cleistogamous flowers. Indeed, the entire growth of this species partakes of the decumbent habit, the rootstock, leaves and flowers being seldom if ever strictly erect. In *V. sagittata* the growth of the plant is erect from the roots and continues so throughout, and the cleistogamous flowers are conspicuously so.

It is sometimes difficult to know, from superficial appearances, where to place *V. palmata*, whether as a variety of *cucullata* or *sagittata*, but the decumbent habit of the intermediate forms point to the former as the type. In the young plants of *palmata*, the palmate and cucullate leaves may often be seen on the same plant, this being in accordance with the well recognized principle that the typical form is always more manifest in the young individuals of the variety or derived species.

The three species of white violets are known to be very closely allied. *V. primulæfolia* and *V. lanceolata* produce such a variety of intermediate forms that it is an utter impossibility to say definitely where some of them belong. *V. blanda*, however, is unmistakably distinct, in several particulars. In the autumn, all three of these species produce runners, but no detailed description of the latter seems to have been made. In the entire Torrey herbarium

there is but one specimen representing the autumn transformation! In *V. blanda* these runners are almost roots, being more or less under the surface of the ground, slender, producing no leaves and bearing no cleistogamous flowers. They grow from the main rootstock, are not numerous, and are somewhat decumbent. *V. primulaefolia* has runners that sometimes reach a length of 12 inches. They are comparatively stout, run along the surface of the ground, and are mostly leaf- and flower-bearing throughout. These runners have nodes or joints from each of which the leaves and erect cleistogamous flowers start—usually one of each. They root at these nodes, and, during the month of October, break away from the parent plant, the nodes forming the nuclei of new plants for the next year. In nearly every specimen the cleistogamous flowers far outnumber the others. The typical form of *V. lanceolata* has somewhat shorter and more robust runners, which are also more leafy—sometimes appearing almost like incipient branches. While the latter two species are invariably found in company, the former is more often solitary, which is another point in its claim for specific distinction.

In all three species the runners begin to form about the middle of August, reach their full growth about the beginning of October, and then most of them decay except at the points where they have taken root.

Viola odorata produces both runners and cleistogamous flowers. The flowers are quite numerous, starting from and clustering around the main rootstock. They are very much appressed, sometimes appearing as if subterranean. The runners, although having leaves, do not seem to bear cleistogamous flowers.

Viola canina, var. *sylvestris*, shows a very beautiful transformation. The branches of the season become elongated, sometimes to full seven inches, and bear clusters of cleistogamous flowers, each upon a short, slender peduncle in the axils. In some specimens little branchlets start from the axils, bearing both leaves and flowers. The autumnal peduncles are not more than two inches long, while those of the early spring are generally three or four inches in length. Again, in the spring, there is but one flower from each axil, while in the autumn there are two or more.

Viola pedata apparently does not produce cleistogamous flowers, but it very commonly blossoms a second time in the autumn. Specimens have been collected as late as the middle of November.

Mr. Schrenk supplemented the paper with some notes on the structure of cleistogamous flowers.

Mr. Britton referred to a peculiar form of *Viola blanda* (*V. amæna*, Leconte) with petioles and peduncles flecked with red.

Veronica Buxbaumii, Tenore, is reported by Mr. Britton as becoming a weed in many places. It is very common in gardens at New Dorp, S. I., and specimens have just been received from New Brunswick, N. J.